

DIFFERENTIAL GEARING UNIT FOR A VEHICLE

ABSTRACT OF THE DISCLOSURE

A sun gear 6 is rotatably disposed inside an internal gear 4 ~~on a concentric circle~~concentrically therewith. A plurality of planet gears 8 which are carried by a planetary carrier 10 are disposed between the internal gear 4 and the sun gear 6 and are in meshing engagement with the internal gear 4 and the sun gear 6. The planetary carrier 10 which carries the planet gears 8 is connected to a shaft extending from an engine while the internal gear 4 and the sun gear 6 are connected to output shafts. The internal gear 4 is molded by a plastic working, followed by a thermal treatment including a soft-nitriding, a nitriding and a carburizing hardening step. The inner surface of the internal gear 4 is formed with internal gear teeth 4b, except for an axial portion 4d, while a spline groove 4a is formed on the outer surface of the internal gear 4 at a location corresponding to the portion 4d where no internal teeth 4b are formed for engagement with a spline 2a on a housing 2. The invention allows the internal gear 4 to be reduced in size while improving athe mechanical strength thereof.